

Readyng Michigan to Make Good Energy Decisions

Senate Energy and Technology Committee Hearing

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Wind Energy is Beneficial for Michigan

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Bringing Wind Power to Market

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Background on Wind on the Wires

- Organized in 2001 to overcome the barriers to bringing wind power to market in the Midwest. WoW is the Midwest regional partner of the American Wind Energy Association (AWEA)
- Work in 3 areas: technical, regulatory/legislative, education/outreach
 - Technical – work with electric utilities and Midwest Independent System Operator (MISO – regional “grid” operator) on transmission planning for wind
 - Regulatory/legislative – actively promoting state and regional policies and decisions to advance wind power
 - Education/outreach – speak to many people and groups about our work and issues
- Support – Foundations and membership dues.
- Members – Wind developers, environmental and community energy



Wind Energy Can Meet Michigan's Future Needs

WIND ENERGY IS --

- Plentiful
- Affordable

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PLENTIFUL: Wind Energy Can Meet an Increased RES

Total Electricity Sold in Michigan (2010): 103,649,219 MWhs

MIDWEST: 0.1 – 0.2% of the potential wind energy in 11 Midwestern states could provide enough energy to meet a 15% to 30% RES requirement in Michigan.

MICHIGAN: The four wind energy zones in Michigan could potentially produce between 9.5% and 17% of Michigan's energy demand.

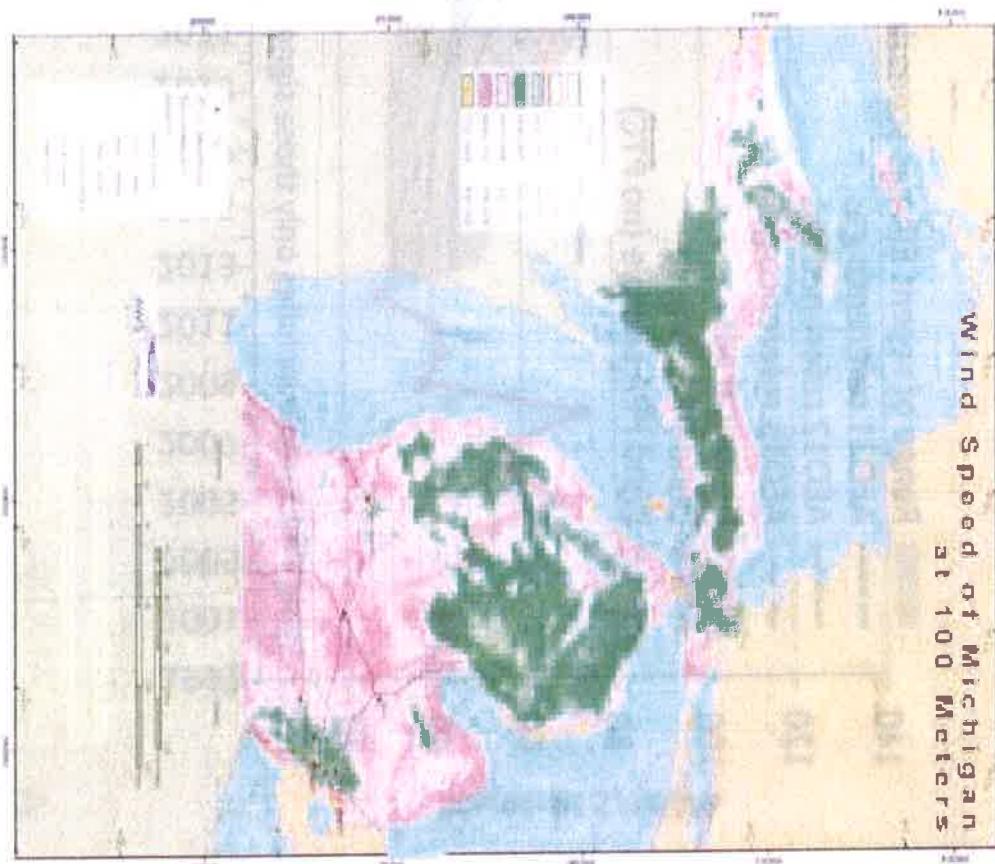
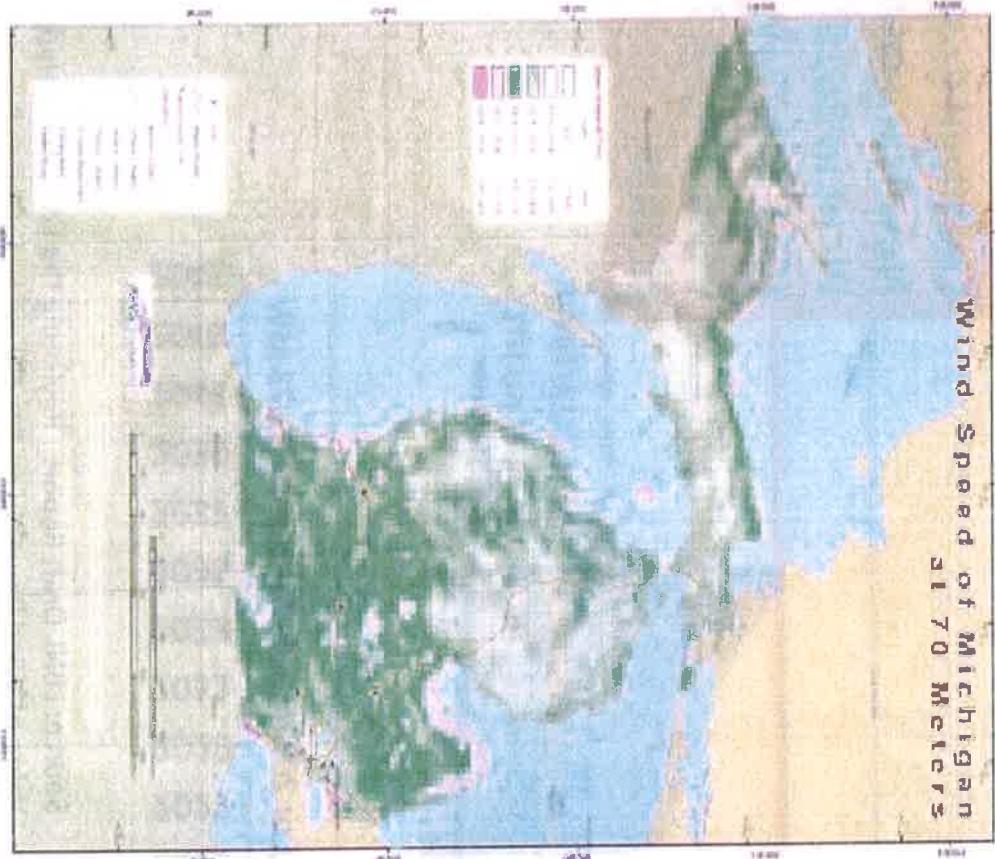
MI could meet a 30% RES with 6-12% of the potential wind capacity NREL estimates is in MI – depending on the wind CF.

Sources: Final Report of the Michigan Wind Energy Resource Zone Board at 5; U.S. E.I.A., state electricity profiles – Michigan; NREL, *Estimates of Windy Land Area and Wind Energy Potential, by State, for areas >= 30% Capacity Factors at 80m (April 13, 2011)*

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PLENTIFUL: Increase in Wind Capacity Factor Due to Improved Technology

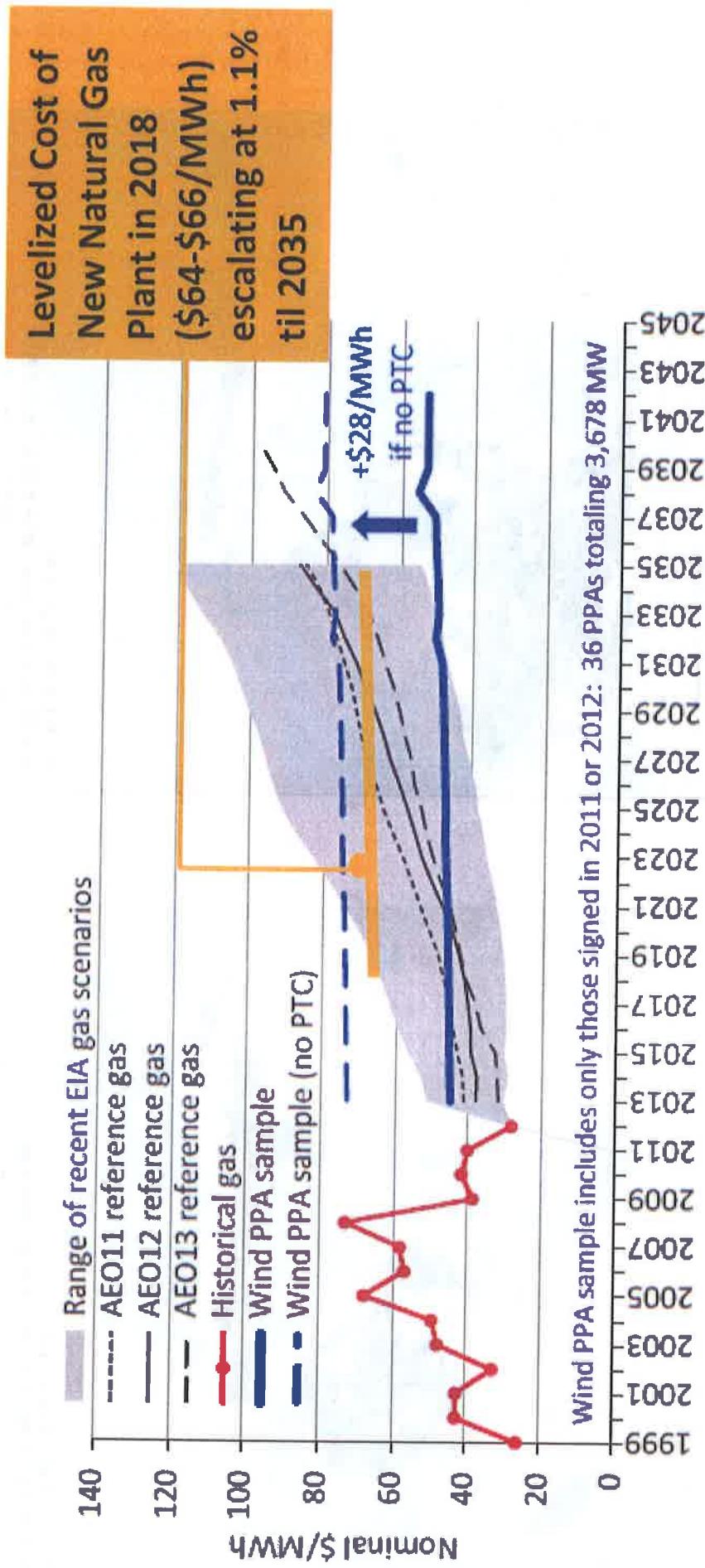


Sources: AWS TruePower analysis for NREL, Estimates of Windy Land Area and Wind Energy Potential, by State, for areas $\geq 30\%$ Capacity Factors at 80m (April 13, 2011)

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AFFORDABLE:

Wind Energy is a Hedge to Natural Gas Price Volatility



Source: LBNL Draft Report : Revisiting the Long-Term Hedge Value of Wind Power in an Era of Low Natural Gas Prices (March 2013); EIA Levelized Cost of New Generation Resources (January 2013)

AFFORDABLE: Wind Energy Lowers Wholesale Prices

- **MISO:** Adding transmission and increasing wind capacity to 1.3X to 2X the current RPS req. (~30 to 50 GW), **would save a typical household** approx. \$63 to \$200 per year in 2031 (*Synapse Energy Economics*)
- **PJM:** Doubling wind energy in PJM states (to ~22%) would **save consumers** \$6.9B per year in 2026 (*Synapse Energy Economics*)
- Illinois Power Agency found that wind resources were primary contributor to **reduction of consumer's electricity costs** by \$177M in 2011 (*Illinois Power Agency*)

Sources: Synapse Energy Economics, Inc., The Potential Rate Effects of Wind Energy and Transmission in the Midwest ISO Region, at 3-4 (May 22, 2012); Synapse Energy Economics, Inc., Net Benefits of Wind in PJM at 22 (May 9, 2013); IL Power Agency, Annual Report: The Costs and Benefits of Renewable Resource Procurement in Illinois Under the Illinois Power Agency and Illinois Public Utilities Acts, 2012, at 3 (April 2012).

Why Increase the RES?

- Operation of coal and natural gas plants pose harm to environment
 - a recent poll indicates Michigan residents want to reduce that harm by using renewables for more than 50% of their energy
- Cost of fossil fuels will increase – therefore, need a **diversified energy portfolio** to hedge against fuel price volatility
- Generating plants operate 20 - 50 years – therefore, **need a long term vision** that reflects public interest, and provides electric providers certainty and stability
- Increased RES increases demand for new manufacturing **work in Michigan**
- Wind developers will pay **taxes to multiple local governments** and new land payments to landowners over a broad area
- Companies generally do not like change – therefore, need to implement an RES change in a way that **provides certainty and stability for the electric service provider**



Conclusion

- There is enough wind energy for Michigan to reliably increase the current RES
- The benefits:
 - Reduced fuel price volatility
 - Less harmful effects from generation of electricity
 - More manufacturing jobs in Michigan
 - Additional tax and land lease revenue over a widespread area

College

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